**The following are the changes from the November Draft Rationale due to comments received internally and during the Workshops in November and December 2007.**

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Table 4 Recommended *E. coli* contact recreation standards for Class A, B, and C lakes, reservoirs, ponds and marshes. See table 3 for EPA recommended freshwater bacterial water qualities.

Changes to *E. coli* protection (No/100 ml) for Lakes and Reservoirs are listed below.

- Change Boulder Reservoir (Washoe County) from infrequent (576) to light (410)
- Change Tonkin Reservoir (Eureka County) from infrequent (576) to light (410)
- Change Hunter Lake (Washoe County) from infrequent (576) to light (410)
- Change Price Lakes (Washoe County) from infrequent (576) to light (410)
- Change Willow Creek Reservoir (Lander County) from light (410) to moderate (298)
- Change Groves Lake from light (410) to moderate (298)
- Change Bowman Reservoir from infrequent (576) to moderate (298)
- Add Wildhorse Reservoir showing AGM of 125 and light recreation protection (410)

Page 17 - 18
Change the wording for the natural conditions for fecal coliform Class C, section 2,

**from:**

2. ~~The annual geometric mean of fecal coliform concentration must not exceed that characteristic of natural conditions by more than 200 per 100 milliliters, and the number of fecal coliform in a single sample must not exceed that characteristic of natural conditions by more than 400 per 100 milliliters.~~ **The 95th percentile of the annual geometric mean and/or the 95th percentile of the single sample fecal coliform concentration.**

**to:**

2. ~~The annual geometric mean of fecal coliform concentration must not exceed that characteristic of natural conditions by more than 200 per 100 milliliters, and the number of fecal coliform in a single sample must not exceed that characteristic of natural conditions by more than 400 per 100 milliliters.~~ **The fecal coliform concentration must not exceed the 95th percentile of the annual geometric mean or the 95th percentile of n, where n equals a certain number of single value samples as determined by the Division.**

# Rationale for Proposed Revisions to the Nevada Water Pollution Control Regulations NAC 445A.124 - NAC 445A.127, and NAC 445A.146 - NAC 445A.225 **Class Waters**

**Prepared by:**

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March, 2008

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## INTRODUCTION

Under section 303 of the Clean Water Act and 40 CFR 131, States have responsibility for setting, reviewing and revising water quality standards. State of Nevada authorities are contained in Nevada Revised Statutes 445A.425, 520 and 565 and water quality standards for waters of Nevada are found in the Nevada Administrative Code (NAC) 445A.118 through 445A.225. The following rationale discusses the review of the proposed changes to the water quality standards for the Class Waters, contained in the Nevada Administrative Code (NAC) 445A.124 through 445A.127 **and the resulting changes to the water quality standards listings NAC 445A.146 through NAC 445A.225.**

The Nevada Division of Environmental Protection (NDEP) is proposing to make two categories of changes to the Nevada Administrative Code: 1) adjustments and additions to the Class Waters, 445A.124 through 445A.127, and; 2) a reorganization of Water Quality Standards Tables, NAC 445A.124 through 127 and 445A.146 through 225.

1) Adjustments and additions to the Class Waters
   - Adjust class waters beneficial use terminology to match the beneficial uses listed in NAC 445A.122;
   - Remove redundant narrative standards cited in the class tables since the narratives in NAC 445A.121 apply;
   - Add Total Ammonia to all current class waters by referencing the tables in NAC 445.118;
   - Add E. Coli standards to all current class waters;
   - Remove section 3 of the Fecal Coliform standard for class C waters, the same level of protection will be given by adding *Escherichia Coli* (E. Coli) standards;
   - Revise references to natural conditions for:
     - Total Dissolved Solids (TDS) in classes A, B and C; and
     - Fecal Coliform in Class C waters.
2) Reorganizing the Water Quality Standards Tables
   - For consistency, all reach descriptions have been reworded to reference the geographic reach limits from the upstream to the downstream limit of the reach.
   - Reformat all water quality standard tables to more clearly show the beneficial uses that are associated with each water quality parameter;
   - Eliminate the current class waters format (NAC 445A.124 - 127) that has individual waterbodies identified as a part of a class group and create an individual table showing water

quality standards for each watebody designated within the class structure and place waters into the current single reach table format; and,

- Reorganize the individual water quality standards tables by Hydrographic Region and renumber all the waterbody tables (NAC 445A.124 through 127 and 146 through 225);

Removing the beneficial uses and narrative standards redundancies will simplify the standards and help reduce confusion over which uses or narratives apply. NDEP is updating the class waters to reflect current EPA recommended criteria for ammonia (1999) and E. Coli (2002). Under the current class standards structure any action necessary to address standards criteria on any individual class waterbody affects all other waters within the same class. Reformatting the class waters into the proposed designated waterbody structure allows more flexibility to address the setting of appropriate water quality standards for individual class waters. Reorganizing and renumbering the water quality standards by Hydrographic Region will facilitate the use of the tables.

## BACKGROUND

NEVADA WATER QUALITY STANDARDS

A water quality standard defines the water quality goals for a water body, or portion thereof, by designating the use or uses to be made of the water, by setting criteria necessary to protect the uses, and by protecting water quality through antidegradation provisions. The State of Nevada has established both narrative and numeric criteria. Statewide narrative criteria are applicable to all waters. In addition to statewide narrative criteria, water quality standards for the categories listed below are explained in the following sections:

| | |
|---|---|
| Narrative Criteria | NAC 445A.121 |
| Numeric Criteria | |
| Toxic materials | NAC 445A.144 |
| Designated Waters | NAC 445A.146 through 445A.225, inclusive |
| Class Waters | NAC 445A.123 through 445A.127, inclusive |

Narrative Criteria

Narrative criteria (contained in NAC 445A.121) are applicable to all surface waters of the state and consist mostly of statements requiring waters to be "free from" various pollutants including those that form sludge deposits, floating debris, oil, materials attributable to domestic or industrial waste, free from high temperature, biocides, toxic and radioactive materials, and other wastes amenable to reasonable

treatment or control. Additionally many of the narratives require that beneficial uses will not be adversely affected.

Numeric Criteria

Numeric criteria for conventional pollutants are established for two types of surface waters: designated and class waters, while toxic criteria apply to class and designated waters.

*Toxic Materials*

Toxic material is defined in NAC 445A.110 as "...any pollutant or combination of pollutants which will on the basis of information available to the administrator, cause an organism or its offspring to die or to suffer any: disease, behavioral abnormality, cancer, genetic mutation, physiological malfunction, including a malfunction in reproduction, or physical deformation, if that pollutant or combination of pollutants is discharged and exposed to or assimilated by the organism, whether directly from the environment or indirectly through food chains."

Numeric criteria for toxic materials which apply to class and designated waters (and may apply to other waters as provided by the tributary rule (NAC 445A.145)) are contained in NAC 445A.144 and 40CFR 131.36. Numeric criteria in NAC 445A.144 are specified for four beneficial uses and apply to all waterbodies having such designated uses. For the beneficial uses of protection of aquatic life, irrigation and watering of livestock, numeric standards are based on ambient water quality criteria published by USEPA. Historically, numeric criteria contained in 445A.144 for the protection of municipal and domestic water supply were based primarily on maximum contaminant levels (MCLs) which have been adopted by the Nevada Board of Health as standards for drinking water.

*Designated Waters*

Standards for the designated waters are contained in NAC 445A.146 through 445A.225, inclusive. Designated waters are major waterbodies for which specific standards are established. Usually these waterbodies are divided into segments or reaches. Beneficial uses and the criteria to protect the uses are established for each reach. Numeric and narrative water quality standards and antidegradation criteria are also included where applicable. The major designated waterbodies for which specific standards have been established include:

- Carson River [NAC 445A.146 - 445A.158]
- Humboldt River [NAC 445A.202 - 445A.208]
- Snake River Region [NAC 445A.214 - 445A.225]
- Truckee River including Lake Tahoe [NAC 445A.181 - 445A.1917]

- Walker River Region [NAC 445A.159 - 445A.1696]
- Colorado River Region including Las Vegas Wash and Lake Mead [NAC 445A.170, 445A.192 - 445A.201]
- Virgin River [NAC 445A.174 - 445A.177]
- Muddy River [NAC 445A.174, 445A.209 - 445A.211]

*Class Waters*

Standards for the class waters are contained in NAC 445A.124 through NAC 445A.127, inclusive. Class waters are comprised of individually identified waters (usually small streams and reservoirs) which are grouped together on the basis of the degree to which human activity generally impact the beneficial uses of the waterbody. Four classes, A through D, are recognized. Class A waters, the least impacted by human activities, are typically the highest quality; Class D waters, being the most impacted by human activities, are lower quality. Beneficial uses and criteria for various pollutants to protect the beneficial uses are specified for each class. Within each class, waters are listed by the county in which they are located and also show the hydrographic region and area.

Class waters include streams that exit the mountain ranges and are either diverted off for irrigation or infiltrate into the playas. Class waters can also be tributaries to the major rivers, like the Little Humboldt, Reese Rivers and Steamboat Creek, or the lower portions of the rivers like the lower Humboldt and Carson Rivers. As stated above, the waters are divided into four classes, A through D. Each class has a definition, a set of beneficial uses, and a set of narrative and numeric standards. Therefore all waters in the same class have the same beneficial uses and the same water quality standards. The different definitions and beneficial uses from the NAC for each class are listed below for comparison.

<u>Definitions</u>

Class A waters include waters or portions of waters located in areas of little human habitation, no industrial development or intensive agriculture and where the watershed is relatively undisturbed by man's activity.

Class B waters include waters or portions of waters which are located in areas of light or moderate human habitation, little industrial development, light-to-moderate agricultural development and where the watershed is only moderately influenced by man's activity.

Class C waters include waters or portions of waters which are located in areas of moderate-to-urban human habitation, where industrial development is present in moderate amounts, agricultural practices are intensive and where the watershed is considerably altered by man's activity.

Class D waters include waters or portions of waters located in areas of urban development, highly industrialized or intensively used for agriculture or a combination of all the above and where effluent sources include a multiplicity of waste discharges from the highly altered watershed.

Beneficial Uses

Class A

The beneficial uses of class A waters are municipal or domestic supply, or both, with treatment by disinfection only, aquatic life, propagation of wildlife, irrigation, watering of livestock, recreation including contact with the water and recreation not involving contact with the water.

Class B

The beneficial uses of class B water are municipal or domestic supply, or both, with treatment by disinfection and filtration only, irrigation, watering of livestock, aquatic life and propagation of wildlife, recreation involving contact with the water, recreation not involving contact with the water, and industrial supply.

Class C

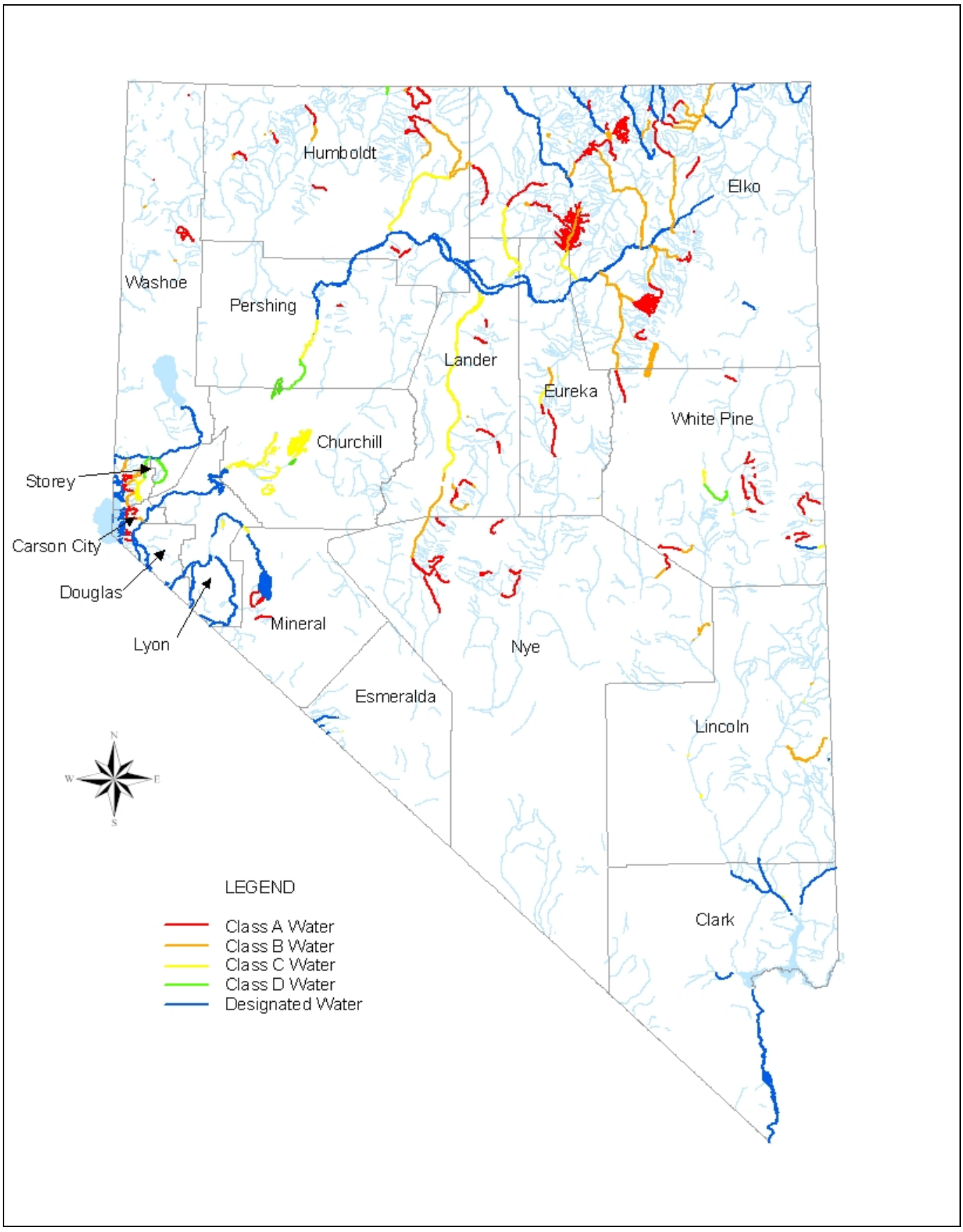
The beneficial uses of class C water are municipal or domestic supply, or both, following complete treatment, irrigation, watering of livestock, aquatic life, propagation of wildlife, recreation involving contact with the water, recreation not involving contact with the water, and industrial supply.

Class D

The beneficial uses of class D waters are recreation not involving contact with the water, aquatic life, propagation of wildlife, irrigation, watering of livestock, and industrial supply except for food processing purposes.

Figure 1 shows all class and designated waters with numeric water quality standards in the state. The waters are sorted into the 4 different class and designated waters. This figure doe not show waters affected by the tributary rule (NAC 445A.145).

**Figure 1 Class and Designated Waters**



## NDEP CONCERNS WITH CLASS WATERS

NDEP has a number of concerns relating to the class waters and the existing format. Some of these will be addressed within this Rationale and they include:

- Lack of flexibility of the class water quality standards to address individual water bodies;
- Some beneficial uses are not being protected adequately by related water quality parameters;
- Inability to administer Requirements to Maintain Existing Higher Quality (RMHQ) in the current format.

**Lack of flexibility:** The class format hinders the flexibility to adjust standards that are clearly inappropriate for identified waterbodies. NDEP cannot adjust a standard for an individual waterbody within a class without affecting the standard for all the other waterbodies in the same class. For example:

- Temperature standards for each class apply to streams and reservoirs or lakes. Some irrigation reservoirs are full of water in the early summer, but may be nearly empty in the late summer or fall. A temperature standard for protection of trout may be appropriate for an irrigation reservoir in the early summer but may not appropriate for lake in the fall when the reservoir is nearly empty.
- Some of the higher quality trout waters may need increased protection and a stricter standard may be appropriate.

In the case of an irrigation reservoir a seasonal standard might be more appropriate, while a high quality trout water may need stricter single value standard or even a more restrictive seasonal standard to protect for early life stages. Due to the current format of the class waters, if a stricter (or less restrictive) standard is adopted then that new standard will apply to all waters in that class. This new standard may be appropriate for some waters but may not be appropriate for all the waters in that class. NDEP cannot account for these types of situations using the existing class waters format.

**Lack of some standards for adopted beneficial uses:** All of the classes have specified beneficial uses, but not all of these uses are protected by recommended criteria. Some of the criteria that could be added as water quality standards to protect the designated uses of the class waters include:

- Site specific natural conditions,
- Nitrogen Species ($NO_3$, $NO_2$, TN, TKN),
- Total Suspended Solids (TSS),
- Chloride, and
- Sulfate.

Some of the recommended numeric criteria for these parameters should differ from waterbody to

waterbody. For instance, depending on the eutrophication of the waterbody, nitrogen and phosphorus standards should vary waterbody to waterbody. The standards in the class waters should reflect these situations, but this cannot be accomplished under the current inability of the class format for dealing with individual waterbodies.

**Application of Requirements to Maintain Existing Higher Quality:** A requirement to maintain existing higher quality (RMHQ) is established when the monitoring data show that existing water quality for individual parameters is significantly better than the standard necessary to protect the beneficial uses (NRS 445A.565). If adequate monitoring data exist, requirements to maintain existing higher quality are established at levels which reflect existing conditions. As each RMHQ is established for a specific reach, the current format of the class waters is difficult to apply RMHQ standards. Utilizing a RMHQ is a fundamental means for NDEP to implement the water quality antidegradation policy.

**Class Waters Issues Summary:** To address the identified class issues NDEP is proposing to eliminate the current class waters structure (NAC 445A.124 - 127) and create individual water quality standards tables for each water identified in the class water sections using a single reach table format. Although the class waters are currently grouped by county, the newly created tables will need to be incorporated into all the other water quality standards tables. NDEP feels that all the water quality tables should be organized by Hydrographic Region (See Figure 2).

Reformatting the class waters into the proposed designated waterbody structure allows more flexibility to address the setting of appropriate water quality standards. Reorganizing and renumbering the water quality standards by hydrographic region will facilitate the use of the water quality standards tables and are discussed below.

## PROPOSED REVISIONS

The Nevada Division of Environmental Protection (NDEP) is proposing to make two categories of changes to the Nevada Administrative Code: 1) CLASS WATERS, adjustments and additions to the Class Waters, 445A.124 through 445A.127, and; 2) WATER QUALITY STANDARDS TABLES, a reorganization of Water Quality Standards Tables, NAC 445A.124 through 127 and 445A.146 through 225. Each of these categories is discussed below.

### Class Waters

For class waters NDEP is proposing to:

- Adjust class waters beneficial use terminology to match the beneficial uses listed in NAC 445A.122;
- Remove redundant narrative standards cited in the class tables since the narratives in NAC 445A.121 apply;
- Add Total Ammonia to all current class waters by referencing the tables in NAC 445.118;
- Add E. Coli standards to all current class waters;
- Remove section 3 of the Fecal Coliform standard for class C waters, the same level of protection will be given by adding *Escherichia Coli* (E. Coli) standards;
- Revise references to natural conditions for:
    - Total Dissolved Solids (TDS) in classes A, B and C; and
    - Fecal Coliform in class C.

#### *Class Beneficial Use Terminology*

NDEP is proposing to adjust beneficial use terminology cited in the class waters to match the beneficial uses listed in NAC 445A.122. The class waters uses have qualifiers related to treatment for Municipal and Domestic Supply and Industrial Supply and are shown below (<u>emphasis added</u>):

- Class A - municipal or domestic supply, <u>or both, with treatment by disinfection only</u>;
- Class B - municipal or domestic supply, <u>or both,</u> <u>with treatment by disinfection and filtration only</u>;
- Class C - municipal or domestic supply, <u>or both, following complete treatment</u>;
- Class D - industrial supply <u>except for food processing</u>.

NDEP is proposing **to remove the emphasized qualifiers** for municipal and domestic supply and industrial supply to conform to the beneficial uses listed in NAC 445A.122. The changes will reduce the confusion as to which treatment qualifier is applied to the tables created for each class water. If NDEP

wishes to protect for these qualified uses it can be done through the individual standards tables with beneficial use standards or antidegradation standards.

***Class Narratives***

NDEP is also proposing to remove the narrative standards listed in the class waters tables. These narratives are very similar to the narrative standards in NAC 445A.121 and the duplication is unnecessarily confusing. The class narratives **to be removed** are shown in Table 1 in the specifications column and the narrative standards in NAC445A.121 are shown in Table 2:

**Table 1 Class Narrative Water quality Standards**

| ITEM | SPECIFICATIONS |
|---|---|
| **Class A** | |
| Floating solids, sludge deposits, tastes or odor-producing substances. | None attributable to man's activities. |
| Sewage, industrial wastes or other wastes. | None. |
| Toxic materials, oils, deleterious substances, colored or other wastes. | None. |
| Settleable solids. | Only amounts attributable to man's activities which will not make the waters unsafe or unsuitable as a drinking water source or which will not be detrimental to aquatic life or for any other beneficial use established for this class. |
| **Class B** | |
| Floating solids, settleable solids or sludge deposits. | Only such amounts attributable to man's activities which will not make the waters unsafe or unsuitable as a drinking water source, injurious to fish or wildlife or impair the waters for any other beneficial use established for this class. |
| Sewage, industrial wastes or other wastes. | None which are not effectively treated to the satisfaction of the department. |
| Odor-producing substances. | Only such amounts which will not impair the palatability of drinking water or fish or have a deleterious effect upon fish, wildlife or any beneficial uses established for waters of this class. |
| Toxic materials, oil, deleterious substances, colored or other wastes, or heated or cooled liquids. | Only such amounts as will not render the receiving waters injurious to fish or wildlife or impair the receiving waters for any beneficial uses established for this class. |
| **Class C** | |
| Floating solids, solids that will settle or sludge deposits. | Only those amounts attributable to the activities of man which will not make the receiving waters injurious to fish or wildlife or impair the waters for any beneficial use established for this class. |
| Sewage, industrial wastes or other | None which are not effectively treated to the satisfaction of the department. |

| | |
|---|---|
| wastes. | |
| Toxic materials, oils, deleterious substances, colored or other wastes or heated or cooled liquids. | Only such amounts as will not render the receiving waters injurious to fish and wildlife or impair the waters for any beneficial use established for this class. |
| **Class D** | |
| Floating solids, settleable solids or sludge deposits. | Only such amounts attributable to the activities of man which will not impair the receiving waters for any beneficial use established for this class. |
| Sewage, industrial wastes or other wastes. | None which are not effectively treated to the satisfaction of the department. |
| Toxic materials, oils, deleterious substances, colored or other wastes or heated or cooled liquid. | Only such amounts as will not impair the receiving waters for any beneficial use established for this class. |

## Table 2 Narrative Water Quality Standards NAC 445A.121

**NAC 445A.121 Standards applicable to all surface waters. (NRS 445A.425, 445A.520)** The following standards are applicable to all surface waters of the state:

1. Waters must be free from substances attributable to domestic or industrial waste or other controllable sources that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent or odorous or in amounts sufficient to interfere with any beneficial use of the water.

2. Waters must be free from floating debris, oil, grease, scum and other floating materials attributable to domestic or industrial waste or other controllable sources in amounts sufficient to be unsightly or in amounts sufficient to interfere with any beneficial use of the water.

3. Waters must be free from materials attributable to domestic or industrial waste or other controllable sources in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish or in amounts sufficient to change the existing color, turbidity or other conditions in the receiving stream to such a degree as to create a public nuisance or in amounts sufficient to interfere with any beneficial use of the water.

4. Waters must be free from high temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances attributable to domestic or industrial waste or other controllable sources at levels or combinations sufficient to be toxic to human, animal, plant or aquatic life or in amounts sufficient to interfere with any beneficial use of the water. Compliance with the provisions of this subsection may be determined in accordance with methods of testing prescribed by the department. If used as an indicator, survival of test organisms must not be significantly less in test water than in control water.

5. If toxic materials are known or suspected by the department to be present in a water, testing for toxicity may be required to determine compliance with the provisions of this section and effluent limitations. The department may specify the method of testing to be used. The failure to determine the presence of toxic materials by testing does not preclude a determination by the department, on the basis of other criteria or methods, that excessive levels of toxic materials are present.

6. Radioactive materials attributable to municipal, industrial or other controllable sources must be the minimum concentrations that are physically and economically feasible to achieve. In no case must materials exceed the limits established in the 1962 Public Health Service Drinking Water Standards (or later amendments) or 1/30th of the MPC values given for continuous occupational exposure in the "National Bureau of Standards Handbook No. 69." The concentrations in water must not result in accumulation of radioactivity in plants or animals that result in a hazard to humans or harm to aquatic life.

7. Wastes from municipal, industrial or other controllable sources containing arsenic, barium, boron, cadmium, chromium, cyanide, fluoride, lead, selenium, silver, copper and zinc that are reasonably amenable to treatment or control must not be discharged untreated or uncontrolled into the waters of Nevada. In addition, the limits for concentrations of the chemical constituents must provide water quality consistent with the mandatory requirements of the 1962 Public Health Service Drinking Water Standards.

8. The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

***Total Ammonia***

The most up to date recommendations for developing freshwater aquatic life criteria for ammonia have been published by the U. S. Environmental Protection Agency (EPA) in "1999 Update of Ambient Water Quality Criteria for Ammonia." The document provides the rationale and methodology used in formulating revised acute and chronic aquatic life ammonia water quality criteria that addresses the temperature and pH-dependence of ammonia toxicity.

The 1999 update contains EPA's most recent recommendation for aquatic life criteria for total ammonia and supersedes all previous freshwater aquatic life ammonia criteria. The new proposed criteria reflect recent research and data since 1984, and are a revision of several of the procedures used to determine the 1984 criteria. As a result, the recommended 1999 criteria are not single values but instead are site-specific values determined via algebraic relationships. The acute criteria [1 hr.] for ammonia are dependent on pH and whether sensitive coldwater species are present. Chronic criteria [96 hr.] are recommended based on the pH and temperature of the water body and are categorized depending on whether early fish life stages are present or absent. In previous criteria recommended by EPA, when chronic toxicity data was lacking, an acute chronic ratio relationship was used to estimate the chronic criteria. In the 1999 update both the acute and chronic criteria are expressed in terms of total ammonia nitrogen rather than un-ionized ammonia.

NDEP updated the ammonia criteria for most of the state in 2002. Although the class waters have aquatic life as a beneficial use the class waters do not have an adopted numeric ammonia water quality standard. Accordingly, NDEP is now proposing to include total ammonia as a standard for all the class waters to conform with EPA recommended 1999 criteria. A standard will be added for total ammonia for each of the class waters referencing the total ammonia tables and algebraic formula in NAC 445A. 118.

***Escherichia Coli***

The existing fecal coliform beneficial use standard was recommended in the Blue Book 1972 to protect the beneficial use of recreation involving contact with the water. More recent studies have indicated that *E. coli*, a subgroup of the fecal coliform group of bacteria, is a better indicator organism of human health risks. NDEP is proposing to add E. Coli bacterial water quality criteria to the class waters throughout the state.

All class A through C waters have contact and non-contact recreation as a beneficial uses. Class D waters have only non-contact recreation. The EPA recommended freshwater bacterial water qualities are listed in Table 3 (EPA Implementation Guidance for Ambient Water Quality for Bacteria - May 2002).

**Table 3 EPA recommended freshwater bacterial water quality criteria**

| | Contact Recreation | | | | | Non-contact Recreation |
|---|---|---|---|---|---|---|
| Indicator | Annual Geometric Mean Value | Single Sample Maximum Allowable Values (number/100 ml) | | | | Annual Geometric Mean Value |
| | | Designated Beach area | Moderate Full Body Contact Recreation | Lightly Used Full Body Contact Recreation | Infrequent Used Full Body Contact Recreation | |
| *E. Coli* | 126 | 235 | 298 | 410 | 576 | 630 |

The bacterial water quality standard for contact recreation would consist of an annual geometric mean value of 126 (number/100 ml) and single sample maximum allowable value based on the frequency of use of the water body and the degree of full body contact with the water. All flowing waters in Class A through C, except for canals and drains, were assumed to be lightly used full body contact recreation and a *E. Coli* standard of 410 (number/100 ml) is proposed. All canals and drains are assumed to have infrequent body contact and an *E. Coli* standard of 576 (number/100 ml) is proposed. All lakes, reservoirs, ponds and marshes were evaluated as to the degree of body contact (beach, moderate, lightly and infrequently) and a single value (number/100 ml) was assigned as shown in Table 4.

The bacterial water quality standard for non-contact recreation, all class D waters, would consist of annual geometric mean allowable value of 630 (number/100 ml)

**Table 4 Recommended *E. Coli* contact recreation standards for Class A, B, and C lakes, reservoirs, ponds and marshes**.

| **Lake/ Reservoir** | **Contact Recreation** | | | |
|---|---|---|---|---|
| | **Beach** | **Moderate** | **Light** | **Infrequent** |
| **[ X ] Waterbody Class** | **235 (No./100 ml)** | **298(No./100 ml)** | **410(No./100 ml)** | **576(No./100 ml)** |
| **Northwest Region** | | | | |
| Boulder Reservoir (A) | | | X | |
| Blue Lakes (A) | | | X | |
| Catnip (A) | | X | | |
| Wall Canyon (B) | | | | X |
| Knott Creek Reservoir (B) | | | X | |

| | | | | |
|---|---|---|---|---|
| Onion Valley Reservoir (B) | | | X | |
| **Black Rock Region** | | | | |
| Squaw Creek Reservoir (B) | | | X | |
| Summit Lake (B) | | | X | |
| Bilk Creek Reservoir (B) | | | | X |
| **Snake Region** | | | | |
| Bull Run Reservoir (B) | | | | X |
| Wildhorse Reservoir (B) | | | X | |
| Wilson Reservoir (B) | | | X | |
| **Humboldt Region** | | | | |
| J. D. Ponds (C) | | | X | |
| Tonkin Reservoir (A) | | | X | |
| Willow Creek Reservoir (Elko Co) (B) | | | X | |
| Iowa Canyon Reservoir (B) | | | X | |
| **Truckee Region** | | | | |
| Hunter Lake (A) | | | X | |
| Washoe Lake (C) | X | | | |
| Hobart Reservoir (B) | | | | X |
| Price Lakes (A) | | | X | |
| Davis Lake (B) | X | | | |
| Tracy Pond (C) | | | | X |
| **Carson Region** | | | | |
| Rattlesnake Reservoir (C) | | | | X |
| Indian Lakes (C) | | | X | |
| South Carson Lake (C) | | | | X |
| Harmon Reservoir (C) | | | | X |
| Stillwater Marsh (C) | | | | X |
| **Walker Region** | | | | |
| Mason Valley WMA (C) | | | | X |
| **Central Region** | | | | |
| Fish Lake (C) | | | | X |
| Willow Creek Reservoir (Lander CO) (B) | | X | | |
| Groves Lake (B) | | X | | |
| Fish Springs Pond (B) | | | | X |
| Illipah Reservoir (B) | | | X | |
| Ruby Marsh (B) | | | | X |

| | | | | |
|---|---|---|---|---|
| Angle Lake (A) | | X | | |
| Comins Reservoir (C) | | | X | |
| Cave Lake (B) | X | | | |
| **Great Salt Lake Region** | | | | |
| Silver Creek Reservoir (B) | | | | X |
| **Colorado Region** | | | | |
| Schroeder Reservoir (C) | | | X | |
| Dacey Reservoir (B) | | | X | |
| Adams McGill Reservoir (B) | | | X | |
| Hay Meadow Reservoir (B) | | | X | |
| Nesbitt Lake (C) | | | | X |
| Pahranagat Reservoir (C) | | X | | |
| Bowman Reservoir (C) | | X | | |
| Eagle Valley Reservoir (B) | X | | | |
| Echo Canyon Reservoir (C) | X | | | |

***Fecal Coliform for Class C Waters***

The fecal coliform for Class C waters has 3 sections; the most stringent of the 3 apply. Section 3 states:

3. The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, and not more than 10 percent of total samples during any 30-day period may exceed 400 per 100 milliliters. This is applicable only to those waters used primarily for recreation involving contact with the water.

This section applies to the class C waters with designated beach areas. As shown in Table 4, the proposed E. Coli standards are protective of waters with beach areas. Section 3, shown above, is a duplication and therefore this standard for fecal coliform is not needed and will be deleted from all Class C waters.

***Natural Conditions***

The class water quality standards reference natural conditions for Total Dissolved Solids (TDS) in class A, B, and C, and Fecal Coliform for class C. Both standards are listed below with <u>emphasis added.</u>

The TDS standard for class A, B and C is:

- ≤500 mg/l <u>or one-third above that characteristic of natural conditions</u> (whichever is less).

The Fecal Coliform standard for class C is:

Fecal Coliform. The more stringent of the following apply:

1 The fecal coliform concentration must not exceed a geometric mean of 1000 per 100 milliliters, and not more than 20 percent of total samples may exceed 2400 per 100 milliliters.

2. The annual geometric mean of fecal coliform concentration must not exceed that characteristic of natural conditions by more than 200 per 100 milliliters, and the number of fecal coliform in a single sample must not exceed that characteristic of natural conditions by more than 400 per 100 milliliters.

3. The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, and not more than 10 percent of total samples during any 30-day period may exceed 400 per 100 milliliters. This is applicable only to those waters used primarily for recreation involving contact with the water.

These standards for natural conditions can be interpreted a number of ways. For example, 1/3 above natural conditions could be interpreted using 1/3 above the mean, 1/3 above median, or 1/3 above one or two standard deviations. NDEP is proposing to remove the natural conditions references for both TDS and Fecal Coliform, and replace the statement with "or the 95th percentile." NDEP uses the 95th percentile when establishing antidegradation standards for waterbodies that have sufficient data available.

The proposed changes to the natural conditions references for TDS and Fecal Coliform Standards are shown below:

The TDS standard for class A, B and C is:

- ≤ 500 mg/l or ~~one-third above that characteristic of natural conditions~~ **the 95th percentile** (whichever is less).

The Fecal Coliform standard for class C is:

Fecal Coliform. The more stringent of the following apply:

1 The fecal coliform concentration must not exceed a geometric mean of 1000 per 100 milliliters, and not more than 20 percent of total samples may exceed 2400 per 100 milliliters.

2. ~~The annual geometric mean of fecal coliform concentration must not exceed that characteristic of natural conditions by more than 200 per 100 milliliters, and the number of fecal coliform in a single sample must not exceed that characteristic of natural conditions by more than 400 per 100 milliliters.~~ **The fecal coliform concentration must not exceed the 95th percentile of the**

**annual geometric mean or the 95th percentile of n, where n equals a certain number of single value samples as determined by the Division.**

3. The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, and not more than 10 percent of total samples during any 30-day period may exceed 400 per 100 milliliters. This is applicable only to those waters used primarily for recreation involving contact with the water.

## PROPOSED REORGANIZING THE WATER QUALITY STANDARDS TABLES

The following items are proposed:

- For consistency, all reach descriptions have been reworded to reference the geographic reach limits from the upstream to the downstream limit of the reach.
- Reformat all water quality standard tables to more clearly show the beneficial uses that apply to each water quality parameter;
- Eliminate the current class waters format (NAC 445A.124 - 127) that has individual waterbodies identified as a part of a class group and create an individual table showing water quality standards for each watebody designated within the class structure and place waters into the current single reach table format; and,
- Reorganize the water quality standards tables by Hydrographic Region and renumber all the tables (NAC 445A.124 through 127 and 146 through 225).

### *Rewording Reach Descriptions*

The reach description for Class Waters have been defined from the upstream limit to the downstream, while the designated waters has been defined from the downstream limit to the upstream. For consistency, NDEP is proposing all reach descriptions be reworded to reference the geographic limits of the reach from the upstream limit to the downstream limit of the reach.

### *Table Reformatting For Beneficial Use*

NDEP is proposing to reformat all water quality standard tables to more clearly show the beneficial uses that apply to each water quality parameter. The existing tables show all uses that a standard is protecting with the first one(s) listed being the most restrictive. The new tables show a matrix of uses with a check box that shows the uses being protected. An example of the new format is shown in Table 5. The table shows the beneficial uses at the top of the table and check box if the standard protects that

use, an " X " is placed in the box.  An asterisk  " * " is utilized if that is the most restrictive use associated with the water quality parameter.

## Table 5 Example of Table Reformatting Showing Beneficial Uses

**NAC 445A.203 Humboldt River near Osino. (NRS 445A.425, 445A.520)**

STANDARDS OF WATER QUALITY
Humboldt River

Control point near Osino. The limits of this table apply from the upstream source of the main stem to the control point near Osino.

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses for NAC 445A. 202 | | | X | X | X | X | X | X | X | X | | | |
| Aquatic Life Species of concern | | | warm water fishery | | | | | | | | | | |
| Temperature °C - ΔT - Single Value[b] | ΔT = 0°C | ΔT ≤2°C | | | * | X | | | | | | | |
| pH Units<br>Standard Units | A-Avg. : 7.0 - 8.3<br>S.V. : 7.0 - 8.5 | S.V. : 6.5 - 9.0<br>ΔpH : ±0.5 | X | X | X | * | | X | X | * | | | |
| Dissolved Oxygen - mg/l | — | S.V. : ≥5.0 | X | | * | X | X | X | | X | | | |
| Chlorides - mg/l | A-Avg. : ≤22<br>S.V. : ≤25 | S.V. : ≤250 | X | X | | | | * | | X | | | |
| Total Phosphorus (as P) - mg/l | — | Apr.-Nov.<br>Seasonal Avg. : ≤0.1 | | | * | X | X | X | | | | | |
| Nitrogen species (N) - mg/l | Total Nitrogen<br>A-Avg.<br>Apr.-Nov. : ≤1.5<br>S.V. : ≤2.4 | Nitrate S.V. : ≤10<br>Nitrite S.V. : ≤1.0 | X | X | X | | | * | | X | | | |
| Total Ammonia (as N) - mg/l | — | c | | | * | | | | | | | | |
| Total Dissolved Solids - mg/l | A-Avg. : ≤370<br>S.V. : ≤385 | A-Avg. : ≤500 | X | X | | | | * | | | | | |
| Suspended Solids - mg/l | — | Annual Median : ≤80d | | | * | | | | | | | | |
| Sulfate - mg/l | — | S.V. : ≤250 | | | | | | * | | | | | |
| Color - PCU | [e] | No Adverse Effects | | | | | | * | | | | | |
| Turbidity - NTU | — | S.V. : ≤50 | | | * | | | X | | | | | |
| Fecal Coliform - No./100 ml | AGM: ≤75<br>S.V.: ≤200 | ≤200/400[f] | X | X | | * | X | X | | X | | | |
| E coli - No./100 ml<br>AGM<br>Single Value | | <br>≤126<br>≤410 | | | | * | X | | | | | | |
| Sodium - SAR | | A-Avg. : ≤8 | | X | | | | X | | | | | |

* = The most restrictive beneficial use.
X = Beneficial Use

[a] Refer to NAC 445A.122 and 445A.202 for beneficial use terminology.
[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone.
[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.
[d] The maximum allowable point source discharge is S.V. ≤ 80 mg/l of suspended solids.
[e] Increase in color must not be more than 10 PCU above natural conditions.
[f] Based on the minimum of not less than 5 samples taken over a 30-day period, the fecal coliform bacterial level may not exceed a geometric mean of 200 per 100 ml nor may more than 10 percent of the total samples taken during any 30-day period exceed 400 per 100 ml

Appendix A shows examples of the current class water standards tables and the new updated tables for Class A through D, showing the format changes. This includes tables for trout and non-trout waters for class B and C. The appendix shows all the class waters (tables A, B - Trout, B, C - Trout, C and D) with all the changes including the class narrative standards, and the natural conditions references, and the additions of the ammonia and *E. Coli* standards.

***Eliminating the Current Class Format***

NDEP is proposing to eliminate the current class waters structure (NAC 445A.124 - 127) and create individual water quality standards tables for each water identified in the class water sections using a single reach table format. Although the class waters are currently grouped by county, the newly created tables will need to be incorporated into all the other water quality standards tables. NDEP feels that all the water quality tables should be organized by Hydrographic Region.

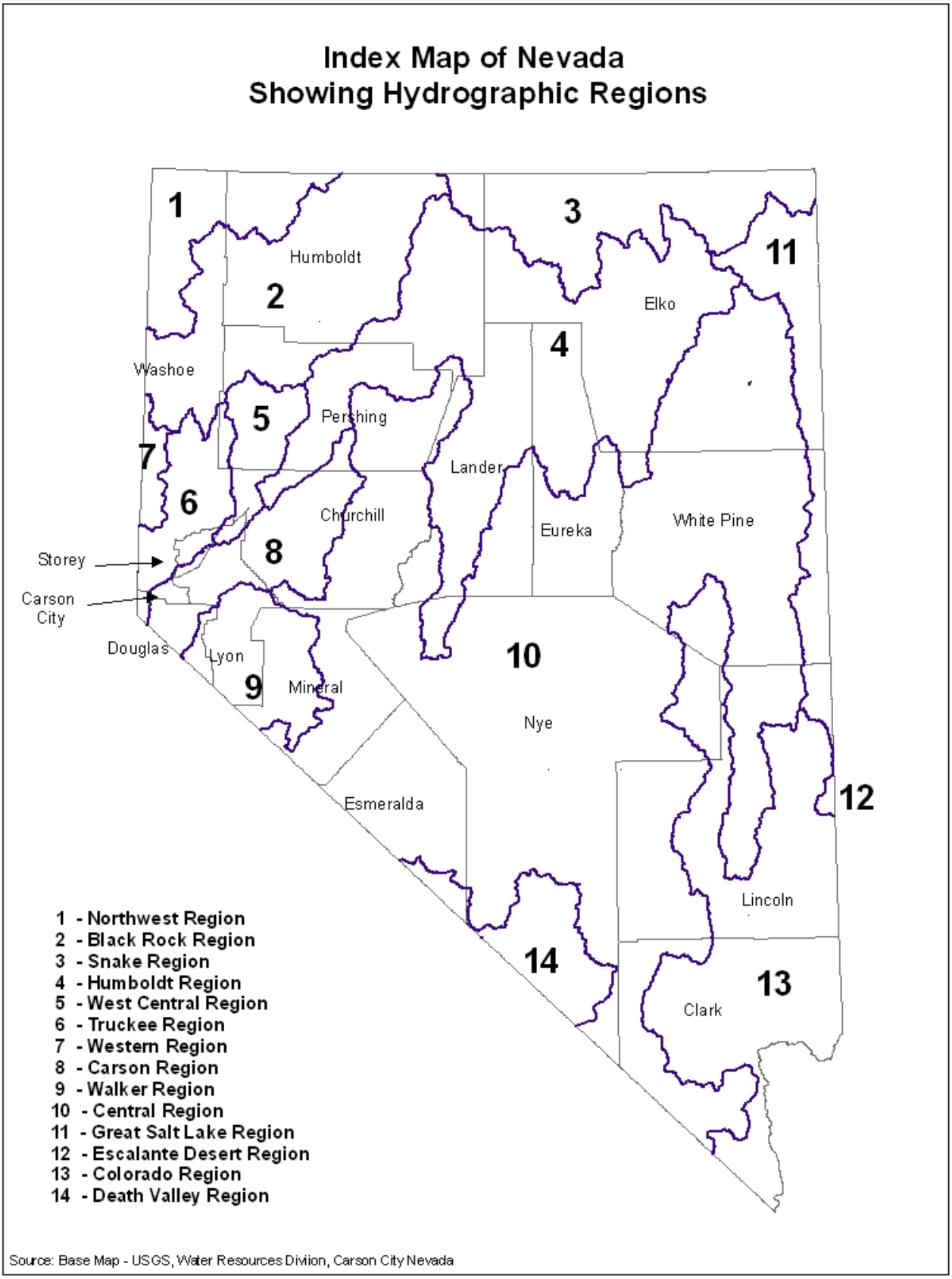
Reformatting the class waters into the proposed designated waterbody structure allows more flexibility to address the setting of appropriate water quality standards. Reorganizing and renumbering the water quality standards by hydrographic region will facilitate the use of the water quality standards tables.

***Reorganizing Water Quality Standards Tables***

NDEP is proposing to reorganize all the water quality standards tables and renumber all the tables (NAC 445A.124 through 127 and 146 through 225). The reorganizing is necessary because all the Class waters tables will need to be incorporated into the single reach table format and NDEP feels that it would be simplest to organize all of the waters by Hydrographic Region. Water quality standards tables and beneficial use tables will be grouped and renumbered by Region for identification and ease of use. A Hydrographic Region map is shown in Figure 2 which is consistent with the hydrographic regions established by the U. S. Geological Survey and used by the Nevada Division of Water Resources.

Due to the large number water quality tables in the proposed reorganization of the NAC, two Indexes have been created to assist with waterbody location. The first index locates the waterbody by Region; while the second index orders waterbody names, regardless of region, alphabetically. An abbreviated example of each is shown in Table 6. The full indexes will be available electronically at the NDEP website after petition process and EPA review is completed. Paper copies will also be available upon request.

**Figure 2 Nevada Hydrographic Regions**



## Table 6 Waterbody Index

**INDEX TABLE 1 – By Region (Example, partial table, NAC numbers are examples only)**

| Waterbody Name | Waterbody Description | County | NAC445A.XXXXX | |
|---|---|---|---|---|
| | | | Beneficial Use | Water Quality Standards |
| **NORTHWEST REGION** | | | | |
| Boulder Reservoir | The entire reservoir. | Washoe | 445A.148 | 445A.149001 |
| Blue Lakes | Entire area. | Humboldt | 445A.148 | 445A.149002 |
| Catnip Reservoir | The entire reservoir. | Washoe | 445A.148 | 445A.149003 |
| Wall Canyon Reservoir | The entire reservoir. | Washoe | 445A.148 | 445A.149004 |
| Knott Creek Reservoir | The entire reservoir. | Humboldt | 445A.148 | 445A.149005 |
| Onion Valley Reservoir | The entire reservoir. | Humboldt | 445A.148 | 445A.149006 |
| | | | | |
| **BLACK ROCK REGION** | | | | |
| Smoke Creek | Approximately 30 miles east of Susanville California. | Washoe | 445A.150 | 445A.151001 |
| Squaw Creek Reservoir | The entire reservoir. | Washoe | 445A.150 | 445A.151002 |
| Negro Creek | From its origin to the first irrigation diversion, near west line of section 28, T. 36 N., R. 23 E, M.D.B. & M. | Washoe | 445A.150 | 445A.151003 |
| Summit Lake | The entire lake. | Humboldt | 445A.150 | 445A.151004 |
| Mahogany Creek | From its origin to Summit Lake. | Humboldt | 445A.150 | 445A.151005 |
| Leonard Creek | From its origin to the first point of diversion, near the south line of section 12, T. 42 N., R. 28 E, M.D.B. & M. | Humboldt | 445A.150 | 445A.151006 |
| Bilk Creek | From its origin to its intersection with the south line of section 35, T. 45 N., R. 32 E., M.D.B. & M. | Humboldt | 445A.150 | 445A.151007 |
| Bilk Creek | From its intersection with the south line of section 35, T. 45 N., R. 32 E., M.D.B. & M. to Bilk Creek Reservoir. | Humboldt | 445A.150 | 445A.151008 |
| Bilk Creek Reservoir | The entire reservoir. | Humboldt | 445A.150 | 445A.151009 |
| Bottle Creek | From its origin to the first point of diversion, near the east line of section 23, T. 40 N., R. 32 E, M.D.B. & M. | Humboldt | 445A.150 | 445A.151010 |
| Quinn River | From its origin to the confluence of the east fork and south fork. | Humboldt | 445A.150 | 445A.151011 |
| Quinn River | From the point of confluence of the east fork and south fork to the Ft. McDermitt Indian Reservation diversion dam. | Humboldt | 445A.150 | 445A.151012 |
| Quinn River | From the Idaho-Nevada state line in section 31, T. 48 N., R. 38 E., to the confluence with the main tributary of the Quinn River at the south section line of section 17, T. 47 N., R. 38 E. | Humboldt | 445A.150 | 445A.151013 |

**INDEX TABLE 2 - Alphabetically (Example, partial table, NAC numbers are examples only)**

| Waterbody Name | Waterbody Description | County | Hydrographic Region | NAC445A.XXXXX | |
|---|---|---|---|---|---|
| | | | | Beneficial Use | Water Quality Standards |
| 76 Creek | Its entire length. | Elko | Snake | 445A.152 | 445A.153021 |
| Adams McGill Reservoir | The entire reservoir. | Nye | Colorado | 445A.172 | 445A.173019 |
| Angel Lake | The entire lake. . | Elko | Central | 445A.166 | 445A.167027 |
| Ash Canyon | From its origin to the first point of diversion of the Carson City water department, near the west line of section 12, T. 15 N., R. 19 E, M.D.B. & M. | Carson City | Carson | 445A.162 | 445A.163020 |
| Baker Creek | From its origin to the national forest boundary | White Pine | Great Salt Lake | 445A.168 | 445A.169003 |
| Barley Creek | From its origin to the first point of diversion, near the national forest boundary. | Nye | Central | 445A.166 | 445A.167019 |
| Bear Creek | From its origin to the point of diversion for the Jarbidge municipal water supply, near the east line of section 17, T. 46 N., R. 58 E, M.D.B. & M. | Elko | Snake | 445A.152 | 445A.153020 |
| Beaver Dam Wash | Above Schroeder Reservoir | Lincoln | Colorado | 445A.172 | 445A.173013 |
| Berry Creek | From its origin to pipeline intake near the national forest boundary. | White Pine | Central | 445A.166 | 445A.167038 |
| Big Creek | From its origin to the east boundary of United States Forest Service Big Creek Campground | Humboldt | Humboldt | 445A.154 | 445A.155053 |
| Big Creek | From the east boundary of the United States Forest Service Big Creek Campground to the first diversion dam, near the west line of section 4, T. 17 N., R. 43 E, M.D.B. & M. | Humboldt | Humboldt | 445A.154 | 445A.155054 |
| Big Goose Creek | | Elko | Snake | 445A.152 | 445A.153001 |
| Bilk Creek | From its origin to its intersection with the south line of section 35, T. 45 N., R. 32 E., M.D.B. & M. | Humboldt | Black Rock | 445A.150 | 445A.151007 |
| Bilk Creek | From its intersection with the south line of section 35, T. 45 N., R. 32 E., M.D.B. & M. to Bilk Creek Reservoir. | Humboldt | Black Rock | 445A.150 | 445A.151008 |
| Bilk Creek Reservoir | The entire reservoir. | Humboldt | Black Rock | 445A.150 | 445A.151009 |
| Birch Creek | From its origin to the national forest boundary. | Lander | Central | 445A.166 | 445A.167014 |
| Birch Creek | From the national forest boundary to the first diversion dam near the west line of section 1,T. 17 N., R. 44 E., M.D.B. & M. | Lander | Central | 445A.166 | 445A.167015 |

An example of the updated structure of the water quality standards tables is shown in Appendix B.

## SUMMARY OF CHANGES TO CLASS WATERS

Appendix A shows examples of the current class water standards tables and the new updated tables for Class A through D, showing the format changes. This includes tables for trout and non-trout waters for class B and C. E. Coli and total ammonia have been added. The natural conditions reference, the class beneficial use subcategory and the class narratives have been removed. Notice the tables allow for RMHQs. Also, for consistency, all reach descriptions have been reworded to reference the geographic limits of the reach from the upstream limit to the downstream limit of the reach**.**

Reformatting the class waters into the proposed designated waterbody structure allows more flexibility to address the setting of appropriate water quality standards. Reorganizing and renumbering the water quality standards by Hydrographic Region will facilitate the use of the water quality standards tables. An example of the reformatted tables for the Northwest Hydrographic Region are included in Appendix B.

## APPENDIX A

Below are examples of the existing class waters format and the new updated tables (with ammonia and E. Coli added), to be inserted for each class waterbody into the appropriate Hydrographic Region. The specific numeric changes in the updated tables are shown in ~~strikeout~~ and **Blue**. For brevity, the **entire class standards tables** are shown but, only **a small portion of the county tables** are included.

### EXISTING CLASS A

**~~NAC 445A.124 Class A waters: Description; beneficial uses; quality standards.~~**

~~1. Class A waters include waters or portions of waters located in areas of little human habitation, no industrial development or intensive agriculture and where the watershed is relatively undisturbed by man's activity.~~

~~2. The beneficial uses of class A waters are municipal or domestic supply, or both, with treatment by disinfection only, aquatic life, propagation of wildlife, irrigation, watering of livestock, recreation including contact with the water and recreation not involving contact with the water.~~

~~3. The quality standards for class A waters are:~~

| ~~Item~~ | ~~Specifications~~ |
|---|---|
| ~~Floating solids, sludge deposits, or taste- or odor-producing substances.~~ | ~~None attributable to man's activities.~~ |
| ~~Sewage, industrial wastes or other wastes.~~ | ~~None.~~ |
| ~~Toxic materials, oils, deleterious substances, colored or other wastes.~~ | ~~None.~~ |
| ~~Settleable solids.~~ | ~~Only amounts attributable to man's activities which will not make the waters unsafe or unsuitable as a drinking water source or which will not be detrimental to aquatic life or for any other beneficial use established for this class.~~ |
| ~~pH.~~ | ~~6.5 to 9.0 SU.~~ |
| ~~Dissolved oxygen.~~ | ~~≥6.0 mg/l.~~ |
| ~~Temperature:~~<br>~~Maximum.~~<br>~~AT.~~ | <br>~~≤20°C.~~<br>~~=0°C.~~ |
| ~~Fecal coliform (No./100ml).~~ | ~~≤200/400.[a]~~ |
| ~~Total phosphorus (as P):~~<br>~~In any stream at the point where it enters a reservoir or lake.~~<br>~~In any reservoir or lake.~~<br>~~In a stream or other flowing water.~~ | <br><br>~~≤0.05 mg/l.~~<br>~~≤0.025 mg/l.~~<br>~~≤0.10 mg/l.~~ |
| ~~Total dissolved solids.~~ | ~~≤500 mg/l or one-third above that characteristic of natural conditions (whichever is less).~~ |

~~a. The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, and not more than 10 percent of total samples during any 30-day period may exceed 400 per 100 milliliters.~~

~~4. The waters classified as class A are:~~

| ~~ELKO COUNTY~~ | | | |
|---|---|---|---|
| ~~Water~~ | ~~HR~~ | ~~HA~~ | ~~Description of Area Classified~~ |
| ~~Angel Lake~~ | ~~10~~ | ~~177~~ | ~~The entire lake.~~ |
| ~~Bear Creek~~ | ~~3~~ | ~~39~~ | ~~From its origin to the point of diversion for the Jarbidge municipal water supply, near the east line of section 17, T. 46 N., R. 58 E., M.D.B. & M.~~ |
| ~~Brown's Gulch~~ | ~~3~~ | ~~37~~ | ~~From its origin to the point of diversion for the Mountain City municipal water supply, near the south line of section 24, T. 46 N., R. 53 E., M.D.B. & M.~~ |
| ~~Camp Creek~~ | ~~3~~ | ~~40~~ | ~~From its origin to the national forest boundary.~~ |
| ~~Canyon Creek~~ | ~~3~~ | ~~40~~ | ~~From its origin to the national forest boundary.~~ |
| ~~Cottonwood Creek~~ | ~~3~~ | ~~40~~ | ~~From its origin to the national forest boundary.~~ |
| ~~Deep Creek~~ | ~~3~~ | ~~37~~ | ~~From its origin to the Wildhorse Reservoir.~~ |
| ~~Green Mountain Creek~~ | ~~4~~ | ~~47~~ | ~~From its origin to the national forest boundary.~~ |
| ~~Hendricks Creek~~ | ~~3~~ | ~~37~~ | ~~From its origin to Wildhorse Reservoir.~~ |

## UPDATED CLASS A

**NAC 445A.XXX Humboldt River, North Fork and tributaries at the national forest boundary: the limits of this table apply to the entire body of water known as the Humboldt River, North Fork, and tributaries in the Independence Mountains, from its origin to the national forest boundary. This section of the North Fork of the Humboldt River is located in Elko County.**

STANDARDS OF WATER QUALITY
Humboldt River, North Fork and tributaries at the national forest boundary

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses NAC 445A.XXX | | | X | X | X | X | X | X | | X | | | |
| Aquatic Life Species of concern | | | | | | | | | | | | | |
| Temperature °C<br>Δ T[b] - °C | | S.V. ≤ 20<br>Δ T = 0 | | | * | X | | | | | | | |
| pH SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.10 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| **Total Ammonia** (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | S.V. ≤ 500 or ~~one-third above that characteristic of natural~~ | X | | | | | * | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **~~conditions~~ the 95th percentile** (whichever is less). | | | | | | | | | | | | |
| **E coli - No./100 ml** | | **AGM ≤126<br>SV ≤410** | | | | * | X | | | | | | | |
| Fecal Coliform-No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | | |

***** = The most restrictive beneficial use.

X = Beneficial Use

[a] Refer to NAC 445A.122 and 445A.XXX of this regulation for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.

## EXISTING CLASS B

**NAC 445A.125 Class B waters: Description; beneficial uses; quality standards.**

**1. Class B waters include waters or portions of waters which are located in areas of light or moderate human habitation, little industrial development, light-to-moderate agricultural development and where the watershed is only moderately influenced by man's activity.**

**2. The beneficial uses of class B water are municipal or domestic supply, or both, with treatment by disinfection and filtration only, irrigation, watering of livestock, aquatic life and propagation of wildlife, recreation involving contact with the water, recreation not involving contact with the water, and industrial supply.**

**3. The quality standards for class B waters are:**

| Item | Specifications |
|---|---|
| Floating solids, settleable solids or sludge deposits. | Only such amounts attributable to man's activities which will not make the waters unsafe or unsuitable as a drinking water source or injurious to fish or wildlife, or will not impair the waters for any other beneficial use established for this class. |
| Sewage, industrial wastes or other wastes. | None which are not effectively treated to the satisfaction of the Department. |
| Odor-producing substances. | Only such amounts which will not impair the palatability of drinking water or fish or have a deleterious effect upon fish, wildlife or any beneficial uses established for waters of this class. |
| Toxic materials, oil, deleterious substances, colored or other wastes, or heated or cooled liquids. | Only such amounts as will not render the receiving waters injurious to fish or wildlife or impair the receiving waters for any beneficial uses established for this class. |
| pH. | 6.5 to 9.0 SU. |
| Dissolved oxygen:<br>Trout waters.[a]<br>All other waters. | <br>≥6.0 mg/l.<br>≥5.0 mg/l. |
| Temperature:<br>Maximum:<br>Trout waters.[a]<br>All other waters.<br>AT. | <br><br>≤20°C.<br>≤24°C.<br>=0°C. |
| Fecal coliform (No./100ml). | ≤200/400.[b] |
| Total phosphorus (as P). | ≤0.10 mg/l. |
| Total dissolved solids. | ≤500 mg/l or one-third above that characteristic of natural conditions (whichever is less). |

a. Trout waters are identified in subsection 4 by the symbol "(T)."

b. The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, and not more than 10 percent of total samples during any 30-day period may exceed 400 per 100 milliliters.

~~4. The waters classified as class B are:~~

| ~~ELKO COUNTY~~ | | | |
|---|---|---|---|
| ~~Water~~ | ~~HR~~ | ~~HA~~ | ~~Description of Area Classified~~ |
| ~~Bull Run Reservoir (T)~~ | ~~3~~ | ~~35~~ | ~~The entire reservoir.~~ |
| ~~Camp Creek (T)~~ | ~~3~~ | ~~40~~ | ~~From the national forest boundary to its confluence with the south fork of Salmon Falls Creek.~~ |
| ~~Canyon Creek (T)~~ | ~~3~~ | ~~40~~ | ~~From the national forest boundary to its confluence with the south fork of Salmon Falls Creek.~~ |
| ~~Cottonwood Creek (T)~~ | ~~3~~ | ~~40~~ | ~~From the national forest boundary to its confluence with the south fork of Salmon Falls Creek.~~ |
| ~~Green Mountain Creek (T)~~ | ~~4~~ | ~~47~~ | ~~From the national forest boundary to its confluence with Corral Creek.~~ |
| ~~Harrington Creek (T)~~ | ~~3~~ | ~~36~~ | ~~From its confluence with Jack Creek to the south fork of the Owyhee River.~~ |

## UPDATED CLASS B - TROUT

**NAC445A.XXX Humboldt River, North Fork, at Beaver Creek: the limits of this table apply to the entire body of water known as the Humboldt River, North Fork, from the national forest boundary to its confluence with Beaver Creek. This section of the North Fork of the Humboldt River is located in Elko County.**

STANDARDS OF WATER QUALITY
Humboldt River, North Fork, at Beaver Creek

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses NAC 445A.XXX | | | X | X | X | X | X | X | X | X | | | |
| Aquatic Life Species of concern | | | Trout | | | | | | | | | | |
| Temperature °C<br>Δ T[b] - °C | | S.V. ≤ 20<br>Δ T = 0 | | | * | X | | | | | | | |
| pH SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | X | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.10 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| **Total Ammonia** (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | S.V. ≤ 500 or ~~one-third above that characteristic of natural conditions~~ **the 95th percentile** | X | | | | | * | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (whichever is less). | | | | | | | | | | | | | |
| **E coli - No./100 ml** | | **AGM** **SV** **≤126** **≤410** | | | | * | X | | | | | | | | |
| Fecal Coliform- No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | | | |

* = The most restrictive beneficial use.
X = Beneficial Use
[a] Refer to NAC 445A.122 and 445A.XXX of this regulation for beneficial use terminology.
[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.
[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.).
[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.

## UPDATED CLASS B - NON TROUT

**NAC 445A.XXX Humboldt River, North Fork, at the Humboldt River: the limits of this table apply to the entire body of water known as the Humboldt River, North Fork, from its confluence with Beaver Creek to its confluence with the Humboldt River. This section of the North Fork of the Humboldt River is located in Elko County.**

STANDARDS OF WATER QUALITY
Humboldt River, North Fork, at the Humboldt River

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses NAC 445A.XXX | | | X | X | X | X | X | X | X | X | | | |
| Aquatic Life Species of concern | | | | | | | | | | | | | |
| Temperature °C Δ T[b] - °C | | S.V. ≤ 24 Δ T = 0 | | | * | X | | | | | | | |
| pH SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | X | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.10 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 5.0 | X | | * | X | X | X | | X | | | |
| **Total Ammonia** (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | S.V. ≤ 500 or ~~one-third above that characteristic of natural conditions~~ **the 95th percentile** (whichever is less). | X | X | | | | * | | | | | |
| **E coli - No./100 ml** | | **AGM** **SV** **≤126** **≤410** | | | | * | X | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fecal Coliform-No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | |

* = The most restrictive beneficial use.
X = Beneficial Use
[a] Refer to NAC 445A.122 and 445A.XXX of this regulation for beneficial use terminology.
[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.
[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.).
[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.

## EXISTING CLASS C

**NAC 445A.126 Class C waters: Description; beneficial uses; quality standards.**

1. Class C waters include waters or portions of waters which are located in areas of moderate-to-urban human habitation, where industrial development is present in moderate amounts, agricultural practices are intensive and where the watershed is considerably altered by man's activity.

2. The beneficial uses of class C water are municipal or domestic supply, or both, following complete treatment, irrigation, watering of livestock, aquatic life, propagation of wildlife, recreation involving contact with the water, recreation not involving contact with the water, and industrial supply.

3. The quality standards for class C waters are:

| Item | Specifications |
|---|---|
| Floating solids, solids that will settle or sludge deposits. | Only those amounts attributable to the activities of man which will not make the receiving waters injurious to fish or wildlife or impair the waters for any beneficial use established for this class. |
| Sewage, industrial wastes or other wastes. | None which are not effectively treated to the satisfaction of the Department. |
| Toxic materials, oils, deleterious substances, colored or other wastes or heated or cooled liquids. | Only such amounts as will not render the receiving waters injurious to fish and wildlife or impair the waters for any beneficial use established for this class. |
| pH. | 6.5 to 9.0 SU. |
| Dissolved oxygen:<br>Trout waters.[a]<br>All other waters. | <br>≥ 6.0 mg/l.<br>≥ 5.0 mg/l. |
| Temperature:<br>Maximum:<br>Trout waters.[a]<br>All other waters.<br>AT. | <br><br>≤ 20°C.<br>≤ 34°C.<br>= 3°C. |
| Fecal coliform (No./100ml). | The more stringent of the following apply:<br>≤ 1000/2400.[b]<br>≤ 200/400.[c]<br>≤ 200/400.[d] |
| Total phosphorus (as P). | ≤ 0.33 mg/l. |
| Total dissolved solids. | ≤ 500 mg/l or one third above that characteristic of natural conditions (whichever is less). |

a. Trout waters are identified in subsection 4 by the symbol "(T)."

b. The fecal coliform concentration must not exceed a geometric mean of 1000 per 100 milliliters, and not more than 20 percent of total samples may exceed 2400 per 100 milliliters.

c. The annual geometric mean of fecal coliform concentration must not exceed that characteristic of natural conditions by more than 200 per 100 milliliters, and the number of fecal coliform in a single sample must not exceed that characteristic of natural conditions by more than 400 per 100 milliliters.

d. The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, and not more than 10 percent of total samples during any 30-day period may exceed 400 per 100 milliliters. This is applicable only to those waters used primarily for recreation involving contact with the water.

~~4. The waters classified as class C waters are:~~

| ~~LYON COUNTY~~ | | | |
|---|---|---|---|
| ~~Water~~ | ~~HR~~ | ~~HA~~ | ~~Description of Area Classified~~ |
| ~~Mason Wildlife Area (T)~~ | ~~9~~ | ~~108~~ | ~~Hinkson Slough, Bass Pond, Crappie Pond and North Pond.~~ |
| ~~Mason Wildlife Area~~ | ~~9~~ | ~~108~~ | ~~All surface water impoundments except Hinkson Slough, Bass Pond, Crappie Pond and North Pond.~~ |

| ~~MINERAL COUNTY~~ | | | |
|---|---|---|---|
| ~~Water~~ | ~~HR~~ | ~~HA~~ | ~~Description of Area Classified~~ |
| ~~Weber Reservoir~~ | ~~9~~ | ~~110~~ | ~~Entire reservoir.~~ |

| ~~PERSHING COUNTY~~ | | | |
|---|---|---|---|
| ~~Water~~ | ~~HR~~ | ~~HA~~ | ~~Description of Area Classified~~ |
| ~~Humboldt River~~ | ~~4~~ | ~~73~~ | ~~From Woolsey to Rodgers Dam.~~ |

## UPDATED CLASS C - TROUT

**NAC 445A.XXX Maggie Creek at Soap Creak: the limits of this table apply to the entire body of water known as Maggie Creek from its confluence with Jack Creek to its confluence with Soap Creak. This section of the Maggie Creek is located in Eureka and Elko Counties.**

STANDARDS OF WATER QUALITY
Maggie Creek at Soap Creek

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses NAC 445A.XXX | | | X | X | X | X | X | X | X | X | | | |
| Aquatic Life Species of concern | | | Trout | | | | | | | | | | |
| Temperature °C<br>Δ T[b] - °C | | S.V. ≤ 20<br>Δ T ≤ 3 | | | * | X | | | | | | | |
| pH - SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | X | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.33 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| **Total Ammonia** (as N) - mg/l | | [c] | | | * | | | X | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids - mg/l | | SV. | ≤ 500 or ~~one-third above that characteristic of natural conditions~~ **the 95th percentile** (whichever is less). | X | X | | | | * | | | | | |
| **E coli - No./100 ml** | | **AGM<br>SV** | **≤126<br>≤410** | | | | * | X | | | | | | |
| Fecal Coliform-No./100 ml | | | [d] | X | X | | * | X | X | | X | | | |

* = The most restrictive beneficial use.

X = Beneficial Use

[a] Refer to NAC 445A.122 and 445A.XXX of this regulation for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] The more stringent of the following apply:

[1] The fecal coliform concentration must not exceed a geometric mean of 1000 per 100 milliliters nor may more than 20 percent of total samples exceed 2400 per 100 milliliters.

[2] ~~**The annual geometric mean of fecal coliform concentration must not exceed that characteristic of natural conditions by more than 200 per 100 milliliters nor may the number of fecal coliform in a single sample exceed that characteristic of natural conditions by more than 400 per 100 milliliters.**~~ **The fecal coliform concentration must not exceed the 95th percentile of the annual geometric mean or the 95th percentile of n, where n equals a certain number of single value samples as determined by the Division**.

~~[3] The fecal coliform concentration, based on a minimum of 5 samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 milliliters. This is applicable only to those waters used for primary contact recreation.~~

## UPDATED CLASS C - NON-TROUT

**NAC 445A.XXX Humboldt River at Rogers Dam: the limits of this table apply to the entire body of water known as Humboldt River at from Woolsey to Rogers Dam. This section of the Humboldt River is located in Pershing County.**

### STANDARDS OF WATER QUALITY

Humboldt River at Rogers Dam

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses NAC 445A.XXX | | | X | X | X | X | X | X | X | X | | | |
| Aquatic Life Species of concern | | | | | | | | | | | | | |
| Temperature °C<br>Δ T[b] - °C | | SV ≤ 34<br>≤ 3 | | | * | X | | | | | | | |
| pH - SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | X | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.33 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 5.0 | X | | * | X | X | X | | X | | | |
| **Total Ammonia** (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | SV. ≤ 500 or ~~one-third above that characteristic of natural conditions~~ **the 95th percentile** (whichever is less). | X | X | | | | * | | | | | |
| **E coli - No./100 ml** | | **AGM ≤126**<br>**SV ≤410** | | | | * | X | | | | | | |
| Fecal Coliform-No./100 ml | | [d] | X | X | | * | X | X | | X | | | |

* = The most restrictive beneficial use.

X = Beneficial Use

[a] Refer to NAC 445A.122 and 445A.XXX for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] The more stringent of the following apply:

1. The fecal coliform concentration must not exceed a geometric mean of 1000 per 100 milliliters nor may more than 20 percent of total samples exceed 2400 per 100 milliliters.
2. ~~The annual geometric mean of fecal coliform concentration must not exceed that characteristic of natural conditions by more than 200 per 100 milliliters nor may the number of fecal coliform in a single sample exceed that characteristic of natural conditions by more than 400 per 100 milliliters.~~ **The fecal coliform concentration must not exceed the 95th percentile of the annual geometric mean or the 95th percentile of n, where n equals a certain number of single value samples as determined by the Division.**
3. ~~The fecal coliform concentration, based on a minimum of 5 samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 milliliters. This is applicable only to those waters used for primary contact recreation.~~

## EXISTING CLASS D

**NAC 445A.127 Class D waters: Description; beneficial uses; quality standards.**

**1. Class D waters include waters or portions of waters located in areas of urban development, highly industrialized or intensively used for agriculture or a combination of all the above and where effluent sources include a multiplicity of waste discharges from the highly altered watershed.**

**2. The beneficial uses of class D waters are recreation not involving contact with the water, aquatic life, propagation of wildlife, irrigation, watering of livestock, and industrial supply except for food processing purposes.**

**3. The quality standards for class D waters are:**

| Item | Specifications |
|---|---|
| Floating solids, settleable solids or sludge deposits. | Only such amounts attributable to the activities of man which will not impair the receiving waters for any beneficial use established for this class. |
| Sewage, industrial wastes or other wastes. | None which are not effectively treated to the satisfaction of the Department. |
| Toxic materials, oils, deleterious substances, colored or other wastes or heated or cooled liquid. | Only such amounts as will not impair the receiving waters for any beneficial use established for this class. |
| pH. | 6.0 to 9.0 SU. |
| Dissolved oxygen. | ≥3.0 mg/l. |

**4. The waters classified as class D waters are:**

| CHURCHILL COUNTY | | | |
|---|---|---|---|
| Water | HR | HA | Description of Area Classified |
| Stillwater Marsh | 8 | 101 | All that area of Stillwater Marsh not designated as class C. |

| HUMBOLDT COUNTY | | | |
|---|---|---|---|
| Water | HR | HA | Description of Area Classified |
| Quinn River | 2 | 33 | From the Idaho-Nevada state line in section 31, T. 48 N., R. 38 E., M.D.B. & M. to the confluence with the main tributary of the Quinn River at the south section line of section 17, T. 47 N., R. 38 E., M.D.B. & M. |

| PERSHING COUNTY | | | |
|---|---|---|---|
| Water | HR | HA | Description of Area Classified |
| Humboldt River | 4 | 73 | Rodgers Dam to, and including, Humboldt Sink. |

**UPDATED CLASS D**

**NAC 445A.XXX Humboldt River at the Humboldt Sink: the limits of this table apply to the entire body of water known as Humboldt River at from Rogers Dam to and including the Humboldt Sink. This section of the Humboldt River is located in Pershing and Churchill Counties.**

## STANDARDS OF WATER QUALITY

Humboldt River at Humboldt Sink

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses NAC 445A.XXX | | | X | X | X | | X | | X | X | | | |
| Aquatic Life Species of concern | | | | | | | | | | | | | |
| pH SU | | S.V. 6.0 - 9.0 | X | X | * | | | | X | * | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 3.0 | X | | * | | X | | | X | | | |
| **Total Ammonia** (as N) - mg/l | | [b] | | | * | | | | | | | | |
| **E coli - No./100 ml** | | **AGM ≤ 630** | | | | | * | | | | | | |

* = The most restrictive beneficial use.
X = Beneficial Use
[a] Refer to NAC 445A.122 and 445A.XXX for beneficial use terminology.
[b] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

## APPENDIX B

Below is an example of the updated water quality standards tables for the Northwest Region. This is an example from the Petition R_160-06. Note section numbering, NAC numbering will not be assigned until after SEC approval.

**Section 3. Designated beneficial uses for select waterbodies within the Northwest Region are prescribed in this section:**

| Waterbody Name | Segment Description | Beneficial Uses | | | | | | | | | | | Aquatic Species of Concern | Water Quality Standard NAC Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh | | |
| Boulder Reservoir | The entire reservoir. | X | X | X | X | X | X | | X | | | | | section 5 of this regulation |
| Blue Lakes | The entire area. | X | X | X | X | X | X | | X | | | | | section 6 of this regulation |
| Catnip Reservoir | The entire reservoir. | X | X | X | X | X | X | | X | | | | | section 7 of this regulation |
| Wall Canyon Reservoir | The entire reservoir. | X | X | X | X | X | X | X | X | | | | Trout | section 8 of this regulation |
| Knott Creek Reservoir | The entire reservoir. | X | X | X | X | X | X | X | X | | | | Trout | section 9 of this regulation |
| Onion Valley Reservoir | The entire reservoir. | X | X | X | X | X | X | X | X | | | | Trout | section 10 of this regulation |
| | | | | | | | | | | | | | | |

| | |
|---|---|
| Livestock | Watering of livestock |
| Irrigation | Irrigation |
| Aquatic | Propagation of aquatic life |
| Contact | Recreation involving contact with the water |
| Noncontact | Recreation not involving contact with the water |
| Municipal | Municipal or domestic supply, or both |
| Industrial | Industrial supply |
| Wildlife | Propagation of wildlife |
| Aesthetic | Waters of extraordinary ecological or aesthetic value |
| Enhance | Enhancement of water quality |
| Marsh | Maintenance of a freshwater marsh |

**Sec. 4. The standards for water quality for the Northwest Region are prescribed in sections 5 to 10 inclusive, of this regulation.**

**Sec. 5 Boulder Reservoir: the limits of this table apply to the entire body of water known as Boulder Reservoir. Boulder Reservoir is located in Washoe County.**

STANDARDS OF WATER QUALITY
Boulder Reservoir

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses | | | X | X | X | X | X | X | | X | | | |
| Aquatic Life Species of concern | | | | | | | | | | | | | |
| Temperature °C<br>Δ T [b] - °C | | SV ≤ 20<br>Δ T = 0 | | | * | X | | | | | | | |
| pH - SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.025 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| Total Ammonia (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | SV. ≤ 500 or the 95th percentile (whichever is less). | X | X | | | | * | | | | | |
| E coli - No./100 ml | | AGM ≤126<br>SV ≤576 | | | | * | X | | | | | | |
| Fecal Coliform-No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | |

***** = The most restrictive beneficial use.
X = Beneficial Use

[a] Refer to NAC 445A.122 and Section 3 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.

**Sec. 6 Blue Lakes: the limits of this table apply to the entire body of water known as Blue Lakes. Blue Lakes is located in Humboldt County.**

STANDARDS OF WATER QUALITY
Blue Lakes

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses | | | X | X | X | X | X | X | | X | | | |
| Aquatic Life Species of concern | | | | | | | | | | | | | |
| Temperature °C<br>Δ T [b] - °C | | SV ≤ 20<br>Δ T = 0 | | | * | X | | | | | | | |
| pH - SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.025 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| Total Ammonia (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | SV. ≤ 500 or the 95th percentile (whichever is less). | X | X | | | | * | | | | | |
| E coli - No./100 ml | | AGM ≤126<br>SV ≤410 | | | | * | X | | | | | | |
| Fecal Coliform-No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | |

* = The most restrictive beneficial use.

X = Beneficial Use

[a] Refer to NAC 445A.122 and Section 3 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.

**Sec. 7 Catnip Reservoir: the limits of this table apply to the entire body of water known as Catnip Reservoir. Catnip Reservoir is located in Washoe County.**

STANDARDS OF WATER QUALITY
Catnip Reservoir

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses | | | X | X | X | X | X | X | | X | | | |
| Aquatic Life Species of concern | | | | | | | | | | | | | |
| Temperature °C<br>Δ T [b] - °C | | SV ≤ 20<br>Δ T = 0 | | | * | X | | | | | | | |
| pH - SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.025 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| Total Ammonia (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | SV. ≤ 500 or the 95th percentile (whichever is less). | X | X | | | | * | | | | | |
| E coli - No./100 ml | | AGM ≤126<br>SV ≤298 | | | | * | X | | | | | | |
| Fecal Coliform-No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | |

* = The most restrictive beneficial use.

X = Beneficial Use

[a] Refer to NAC 445A.122 and Section 3 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.

**Sec. 8 Wall Canyon Reservoir: the limits of this table apply to the entire body of water known as Wall Canyon Reservoir. Wall Canyon Reservoir is located in Washoe County.**

STANDARDS OF WATER QUALITY
Wall Canyon Reservoir

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses | | | X | X | X | X | X | X | X | X | | | |
| Aquatic Life Species of concern | | | Trout | | | | | | | | | | |
| Temperature °C<br>Δ T [b] - °C | | SV ≤ 20<br>Δ T = 0 | | | * | X | | | | | | | |
| pH - SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | X | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.10 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| Total Ammonia (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | S.V. ≤ 500 or the 95th percentile (whichever is less). | X | X | | | | * | | | | | |
| E coli - No./100 ml | | AGM ≤126<br>SV ≤576 | | | | * | X | | | | | | |
| Fecal Coliform-No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | |

* = The most restrictive beneficial use.
X = Beneficial Use

[a] Refer to NAC 445A.122 and Section 3 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.

**Sec. 9 Knott Creek Reservoir: the limits of this table apply to the entire body of water known as Knott Creek Reservoir. Knott Creek Reservoir is located in Washoe County.**

STANDARDS OF WATER QUALITY
Knott Creek Reservoir

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses | | | X | X | X | X | X | X | X | X | | | |
| Aquatic Life Species of concern | | | Trout | | | | | | | | | | |
| Temperature °C<br>Δ T [b] - °C | | SV ≤ 20<br>Δ T = 0 | | | * | X | | | | | | | |
| pH - SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | X | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.10 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| Total Ammonia (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | S.V. ≤ 500 the 95th percentile (whichever is less). | X | X | | | | * | | | | | |
| E coli - No./100 ml | | AGM ≤126<br>SV ≤410 | | | | * | X | | | | | | |
| Fecal Coliform-No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | |

* = The most restrictive beneficial use.
X = Beneficial Use

[a] Refer to NAC 445A.122 and Section 3 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.

**Sec. 10 Onion Valley Reservoir: the limits of this table apply to the entire body of water known as Onion Valley Reservoir. Onion Valley Reservoir is located in Washoe County.**

STANDARDS OF WATER QUALITY
Onion Valley Reservoir

| PARAMETER | REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY | WATER QUALITY STANDARDS FOR BENEFICIAL USES | Beneficial Use[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Livestock | Irrigation | Aquatic | Contact | Noncontact | Municipal | Industrial | Wildlife | Aesthetic | Enhance | Marsh |
| Beneficial Uses | | | X | X | X | X | X | X | X | X | | | |
| Aquatic Life Species of concern | | | Trout | | | | | | | | | | |
| Temperature °C<br>Δ T [b] - °C | | SV ≤ 20<br>Δ T = 0 | | | * | X | | | | | | | |
| pH - SU | | S.V. 6.5 - 9.0 | X | X | * | * | | X | X | * | | | |
| Total Phosphorous (as P) - mg/l | | S.V. ≤ 0.10 | | | * | * | X | X | | | | | |
| Dissolved Oxygen - mg/l | | S.V. ≥ 6.0 | X | | * | X | X | X | | X | | | |
| Total Ammonia (as N) - mg/l | | [c] | | | * | | | X | | | | | |
| Total Dissolved Solids - mg/l | | S.V. ≤ 500 the 95th percentile (whichever is less). | X | X | | | | * | | | | | |
| E coli - No./100 ml | | AGM ≤126<br>SV ≤410 | | | | * | X | | | | | | |
| Fecal Coliform-No./100 ml | | ≤200/400 [d] | X | X | | * | X | X | | X | | | |

* = The most restrictive beneficial use.
X = Beneficial Use

[a] Refer to NAC 445A.122 and Section 3 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.

[d] Must not exceed a geometric mean of 200 per 100 milliliters based on a minimum of 5 samples during any 30-day period, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 ml.